NORTON
SAINT-GOBAIN

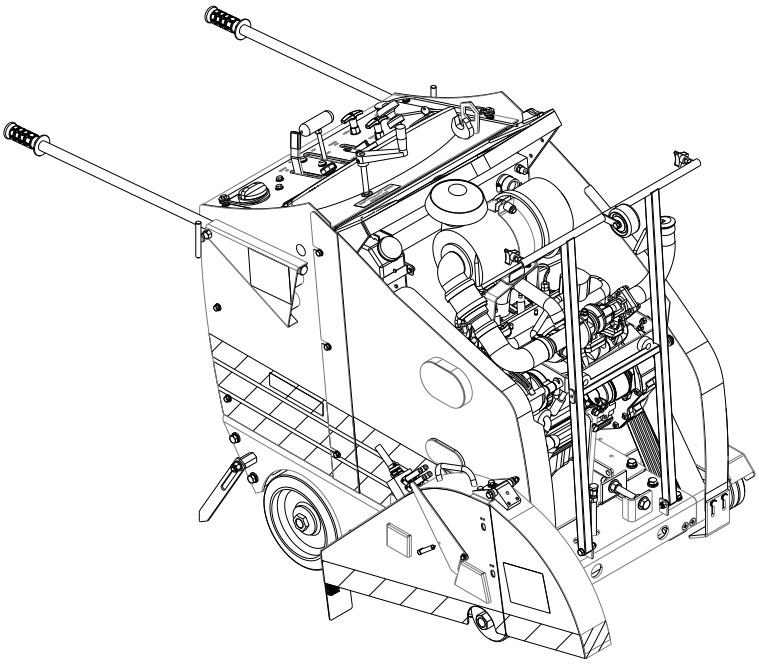
clipper®

Service Saw Series 02/2013

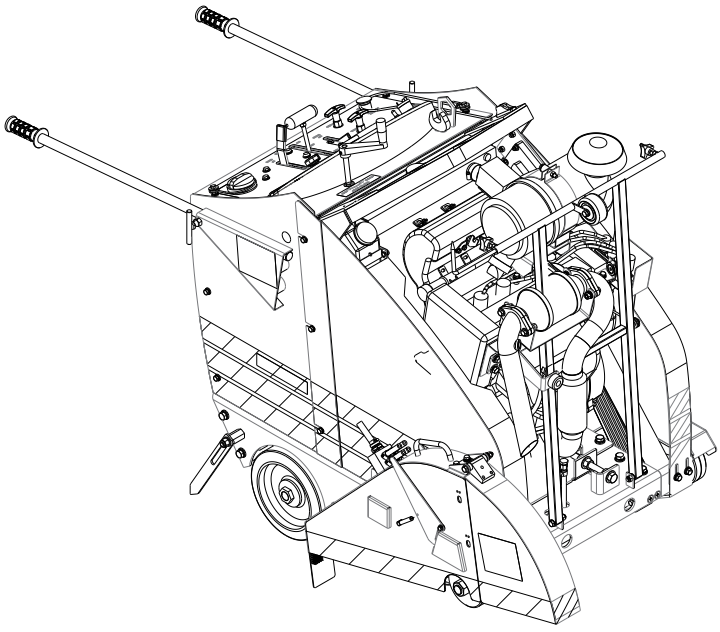
SERVICE SAW SERIES
OPERATOR'S MANUAL

C44SD/GD KUBOTA DIESEL SERIES
C48SD/GD HYUNDAI GASOLINE SERIES

SD-SINGLE SPEED
GD-THREE SPEED



Kubota,
Diesel Engine



Hyundai
Gasoline Engine

CAUTION: Read all safety and operating instructions before using this equipment. This manual **MUST** accompany the equipment at all times.

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Manual Part# 168498-OM

www.nortonconstructionproducts.com

INTRODUCTION

Congratulations on your purchase of a Norton Clipper Service Saw. We are certain that you will be pleased with your purchase. Norton Clipper takes pride in producing the finest construction power tools and diamond blades in the industry.

Operated correctly, your Norton Clipper Service Saw should provide you with years of service. In order to help you, we have included this manual. This owners manual contains information necessary to operate and maintain your Norton Clipper Service Saw safely and correctly. Please take the time to familiarize yourself with the Norton Clipper Service Saw by reading and reviewing this manual.

Read and follow all safety, operating and maintenance instructions.

If you should have questions concerning your Norton Clipper Service Saw, please feel free to call our friendly customer service department at: (254) 918-2310.

Regards,

NORTON SAINT-GOBAIN clipper®

NOTE THIS INFORMATION FOR FUTURE USE:

MODEL NUMBER:	
SERIAL NUMBER:	
PURCHASE PLACE:	
PURCHASE DATE:	

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Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the Safety Precaution and Operating Instructions could result in injury to yourself and others.

This Operation and Parts Manual has been developed to provide complete instructions for the safe and efficient operation of the Norton Clipper Service Saw.

Before using this machine, ensure that the person operating the machine has read and understands all instructions in this manual.

SAFETY MESSAGE / ALERT SYMBOLS

A safety message alerts you to potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol (⚠) and one of three words: **DANGER**, **WARNING**, or **CAUTION**.

⚠ DANGER

You **WILL** be **KILLED** or **SERIOUSLY INJURED** if you do not follow directions.

⚠ WARNING

You **CAN** be **KILLED** or **SERIOUSLY INJURED** if you do not follow directions.

⚠ CAUTION

You **CAN** be **INJURED** if you do not follow directions. It may also be used to alert against unsafe practices.

Each message tells you what the hazard is, what can happen, and what you can do to avoid or reduce injury. Other important messages are preceded by the word **NOTICE.**

⚠ NOTICE

You can cause **PROPERTY DAMAGE** to your machine if you don't follow directions.

The safety labels should be periodically inspected and cleaned by the user to maintain good legibility at a safe viewing distance. If the label is worn, damaged or illegible, it should be replaced.

SAFETY WARNINGS

SILICA DUST WARNING

Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious or fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm. If you are unfamiliar with the risks associated with the particular process and/or material being cut or the composition of the tool being used, review the material safety data sheet and/or consult your employer, the material manufacturer/supplier, governmental agencies such as OSHA and NIOSH and other sources on hazardous materials and make certain to comply with all product warnings and instructions for the safe and effective use of the material being cut. California and some other authorities, for instance, have published lists of substances known to cause cancer, reproductive toxicity, or other harmful effects.

Control dust, mist and fumes at the source where possible. In this regard use good work practices and follow the recommendations of the manufacturer/supplier, OSHA/NIOSH, and occupational and trade associations. Water should be used for dust suppression when wet cutting is feasible. When the hazards from inhalation of dust, mists and fumes cannot be eliminated through engineering controls such as vacuum and/or water mist, the operator and any bystanders should always wear a respirator approved by NIOSH/MSHA for the material being cut.

CALIFORNIA PROPOSITION 65 MESSAGE

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contain chemicals known (to the State of California) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead, from lead-based paints
- Crystalline silica, from bricks and cement and other masonry products
- Arsenic and chromium, from chemically treated lumber

For further information, consult the following sources:
http://www.osha.gov/dsg/topics/silicacrystalline/index.html
http://www.cdc.gov/niosh/docs/96-112/
http://oehha.ca.gov/prop65/law/P65law72003.html
http://www.dir.ca.gov/Title8/sub4.html

Your risk from these exposures varies depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

RULES FOR SAFE OPERATION

DANGER

Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by trained and qualified personnel only! This equipment is for industrial use only.

The following safety guidelines should always be used when operating the Norton Clipper Service Saw.

MAINTENANCE SAFETY

- **NEVER** lubricate components or attempt service on a running machine.
- Keep the machinery in proper running condition. Clean the machine after each day's use. Follow instructions for changing accessories. Inspect tool periodically and, if damaged, have repaired by authorized service facility.

SET UP & TRANSPORTATION SAFETY

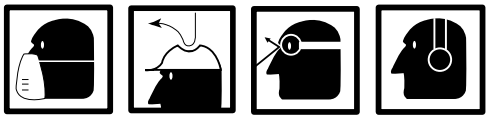
- **ALWAYS** use caution and follow the instructions when lifting and transporting this machine.
- **ALWAYS** tie down the machine when transporting. **DO NOT** tow this machine behind a vehicle.
- **NEVER** transport with the blade mounted on the machine.
- Lift only from the lift bail.

GENERAL SAFETY

- **DO NOT** operate or service this equipment before reading this entire manual. Read and understand all warnings, instructions and controls on the machine.

This equipment should not be operated by persons under 18 years of age.

- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steel-toed boots and other protective devices required by the job.
- **NEVER** operate this equipment when not feeling well due to fatigue, illness or taking medicine.
- **NEVER** operate this equipment under the influence of drugs or alcohol.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult to read.
- **ALWAYS** check the machine for loose bolts before starting.



- **ALWAYS** wear proper respiratory, head, ear and eye protection equipment when operating this machine.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.

- **CAUTION** must be observed while servicing the machine. Rotating parts can cause injury if contacted. Have all service performed by competent service personnel.

- Operate this machine only in well ventilated areas. **ALWAYS** ensure that the machine is on level ground before using.

- **NEVER** operate this machine in an explosive atmosphere.

- Establish a training program and give a copy of this manual to operators of this equipment. If you need extra copies, call (254) 918-2310.

SAW BLADE SAFETY

For complete safety information, refer to ANSI Safety Code B7.1 available through the American National Standards Institute.

- **ALWAYS** keep area around the machine clear of obstructions and clear the work area of unnecessary people. Keep all body parts away from the blade and all other moving parts.

- Before starting the machine, check that all guards are in position and correctly fitted. **NEVER** allow blade exposure from the guard to be more than 180 degrees. **DO NOT** operate this machine with any guard removed.

- Inspect the blade, flanges and shafts for damage before installing the blade. **NEVER** use damaged or worn blade flanges.

- The blade shaft flanges must be of proper diameter for the size blade being used.

- Inspect the blade, flanges and size shown for each blade size. **DO NOT** exceed maximum blade speed shown, as excessive speed could result in blade breakage. Use **ONLY** blades marked with a maximum operating speed greater than the blade shaft speed. Verify speed and saw drive configuration by checking blade shaft RPM and pulley diameters and blade flange diameters.

- Use the correct blade for the type of work being done. Use only reinforced abrasive blades or steel center diamond blades and flanges supplied with the saw or manufactured for use on concrete saws. **DO NOT** use carbide-tipped blades. Check with the blade manufacturer if you do not know if blade is correct.

- Make sure the blade and flanges are clean and free of dirt and debris before mounting the blade on the saw. Verify the blade arbor hole matches the machine spindle before mounting the blade. **ALWAYS** mount the blade solidly and firmly. Wrench tighten the arbor nut.

• Make sure the blade is not contacting anything before starting the engine.

• **ALWAYS** cut in a straight line. **DO NOT** cut deeper than 1" per pass with a dry blade. Step cut to achieve deeper cuts. **NEVER** cock, jam wedge or twist the blade in a cut. **DO NOT** grind on the side of the blade.

• **DO NOT** touch a dry cutting blade immediately after use. These blades require several minutes to cool after each cut. **DO NOT** use a blade that has been overheated (Core bluish color).

FUELING SAFETY

• **ALWAYS** use caution when handling fuel. Shut off the engine and allow to cool before refueling.

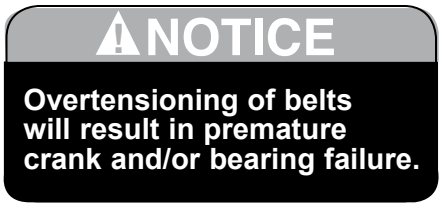
• Move the machine at least 10 feet (3 meters) from the fueling point before starting the engine and make sure the gas cap is on the machine and the fuel can is properly tightened.

NOTES

OPERATION & SAFETY DECALS

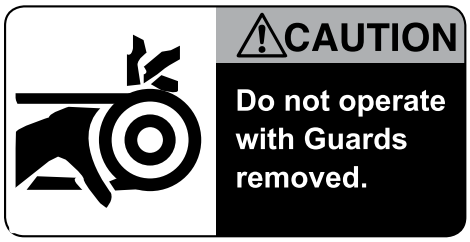
The Norton Clipper Service Saw is equipped with a number of safety decals provided for operator safety and maintenance information. Should any of these decals become unreadable, replacements can be obtained by calling (254) 918-2310.

Decal A

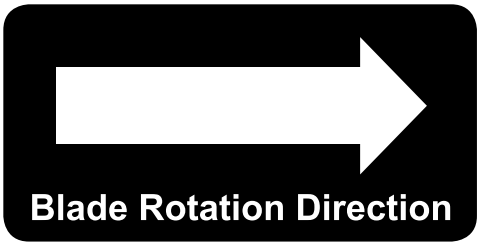


Decal B

Decal C



Decal D, E & G



Decal F

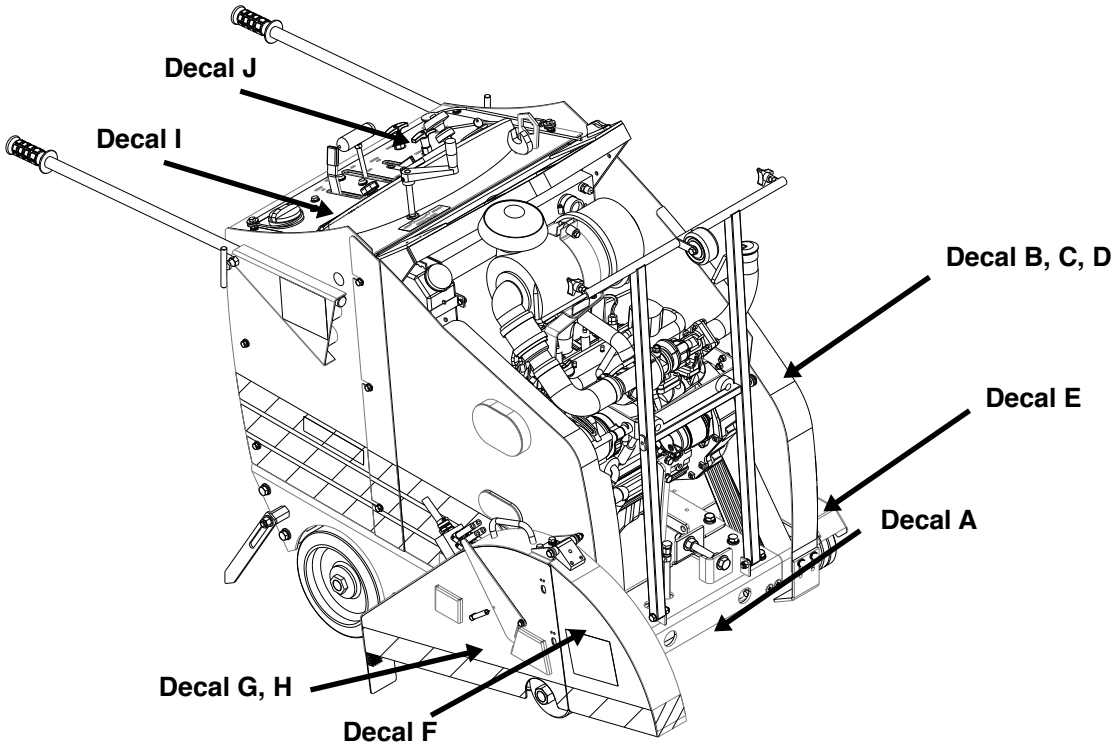
Decal H

Decal I

Decal J

Norton Clipper Service Saw Decal Sheet, Part No. 246002

SAFETY DECAL LOCATIONS

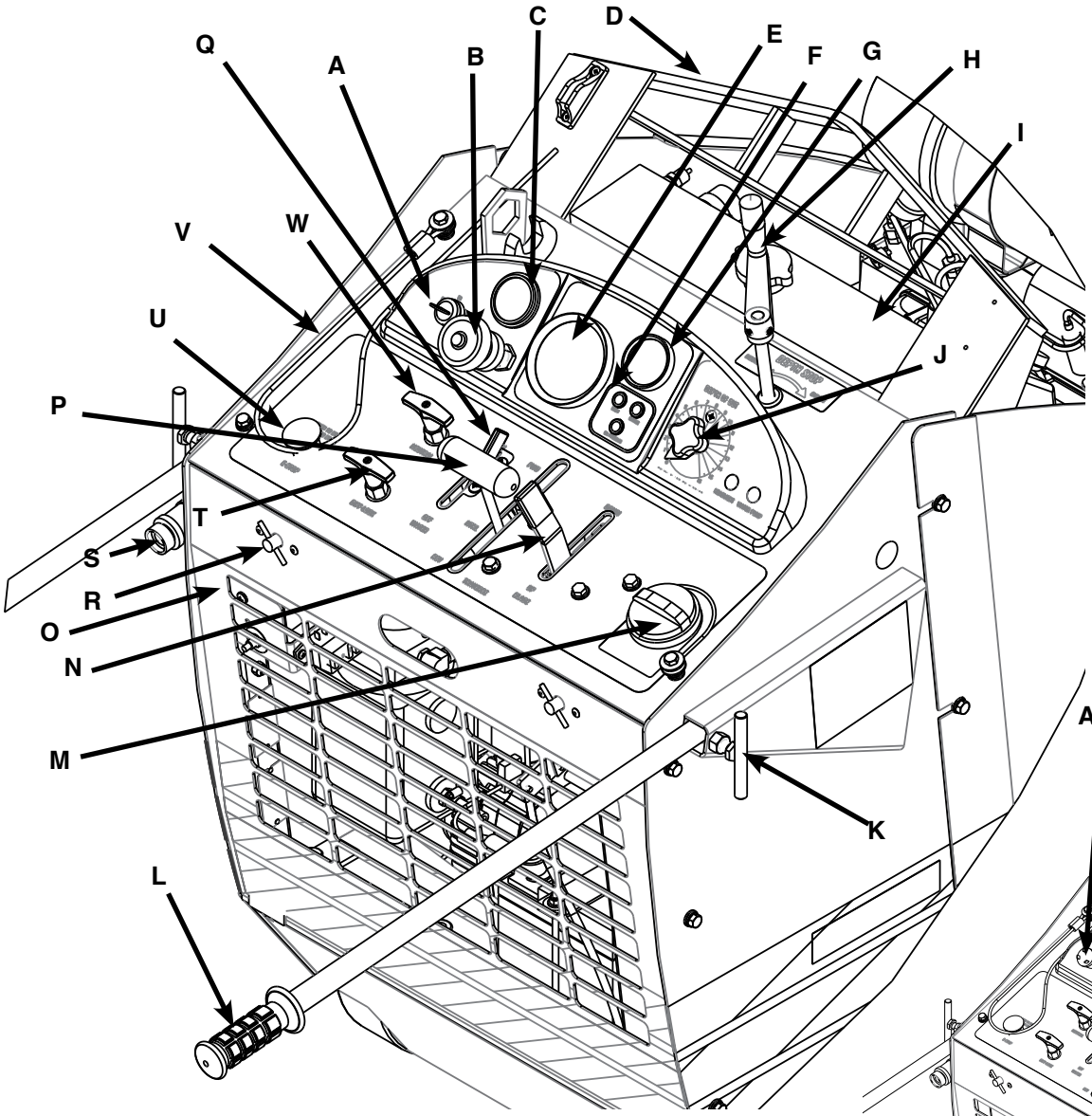


Norton Clipper Service Saw Safety Decal Locations

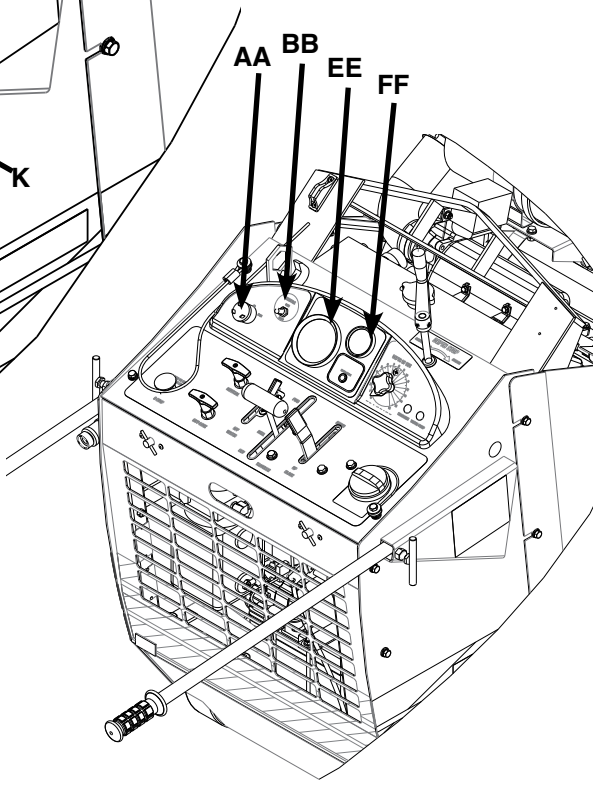
Decal	Location	Description
A	Machine Front	Caution Keep Hands and Feet Clear
B	Top of Belt Guard	Caution Do Not Overtension Belts
C	Top of Belt Guard	Caution Do Not Touch Hot Surface
D	Top of Belt Guard	Caution Do Not Operate with Guard Removed
E	Face of Shaft Guard	Caution Do Not Operate with Guard Removed
F	Top of Blade Guard	Blade Rotation Direction
G	Side of Blade Guard	Caution Do Not Operate with Guard Removed
H	Top of Blade Guard	Warning Do Not Change to Larger Blade Guard
I	Console	Warning Reading the manual, Machinery hazard, protect hearing, seeing, headgear, California Proposition 65 message
J	Console	Danger Lethal exhaust gases

CONSOLE CONTROLS

The following is a list of console controls elements:



Hyundai, Kubota



Hyundai Only

CONSOLE CONTROL DESCRIPTIONS

Hyundai & Kubota Console

Decal	Name	Function
A	Ignition Switch	Use to start engine (Glow-OFF-ON-START).
B	Engine Throttle	Controls engine speed.
C	Engine Temp Gauge	Shows temperature of engine.
D	Lifting Points	Used to lift saw.
E	Engine Tachometer	Shows the engine RPM's.
F	Indicator Lights	Indication of Oil Pressure, Charge and Glow Plug.
G	Fuel Gauge	Shows the level of fuel in the fuel tank.
H	Depth Stop	Sets the depth stop for repetitive cuts at the same depth.
I	Radiator	Filled with engine coolant
J	Depth Indicator	Displays cutting depth.
K	T-Handle Knob	Use to tighten operator grip handles.
L	Handle Grip	For operator gripping.
M	Fuel Tank Fill	Fill the fuel tank at this location.
N	Raise/Lower Handle	Controls raising and lowering of blade.
O	Temp Gauge Reset	Must be reset after overheat condition
P	FNR Handle	Used to set direction of saw (Forward/Neutral/Reverse).
Q	Water Valve Lever	Controls water flow to blade guard.
R	Back Panel Knob	1/4 Turn Fastener to remove back.
S	Water Inlet	Hook-up for standard water hose.
T	Turn-To-Lock, Locker	Locks Transmission differential.
U	E-Stop	Stops down engine in an emergency!
V	Point Lift Cable	Allows operator to lift pointer.
W	Neutral Engagement Handle	Engages Transmission, Turn-To-Lock.

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AA	Keyless Ignition Switch	Use to start engine (OFF-ON-START).
BB	Engine Throttle Switch	Controls engine speed
EE	Engine Tachometer and readout	Shows engine RPM'S and diagnostic information.
FF	Check Engine Light	Lights to indicate a fault.

TECHNICAL SPECIFICATIONS	C4420SD	C4426SD	C4430SD	C4436SD
Product Number	701846 **42484** 4	701846 **42486** 8	701846 **42488** 2	701846 **42490** 5
Blade Guard Capacity – in (mm)	20" (508)	26" (660)	30" (762)	36" (914)
Maximum Depth of Cut – in (mm)	8" (203)	10-1/2" (267)	12-1/2" (318)	15" (381)
Arbor Size – in (mm)	1" (25.4)	1" (25.4)	1" (25.4)	1" (25.4)
Blade Flange Diameter – in (mm)	4" (102)	5" (127)	5" (127)	6" (152)
Blade Shaft RPM	2,300	2,300	1,750	1,450
Blade Shaft Diameter – in (mm)	1-5/8" (41)			
Blade Shaft Bearings	Oil Bath			
Blade Shaft Drive	7 Belts			
Blade Guard Attachment	Quick Detach Bayonet			
Blade Control	Electro-Hydraulic			
Axle – Front – in (mm)	1" (25.4)			
Axle – Rear – in (mm)	1" (25.4)			
Wheels – Front D x W x B – in (mm)	6"x2-1/2"x1" (152x64x25)			
Wheels – Rear D x W x B – in (mm)	10"x3"x1" (254x77x25)			
Handle Bars/Adjustment Length – in (mm)	32-1/2" (826)			
Transmission	Eaton Hydrostatic			
Rear End/Differential	Differential – Norton			
Control	Forward/Reverse Control, Engage/Disengaged Controls and Differential Lock			
Speed	0-220 FPM (Forward) 0-100 FPM (Reverse)			
Chassis	Heavy Duty jig-welded box frame			
Power Source	Diesel Turbo Charged			
Engine Type	Kubota			
Specifications	V1505-T-E3B-KEA-1			
*Maximum Horsepower**	44 HP (32.8kw)			
Displacement – cu In (l)	91.4 cu in (1,498 l)			
Bore – in (mm)	3.07" (78)			
Stroke – in (mm)	3.09" (78.4)			
Cylinders/Cycle	4 Cylinder Diesel			
Fuel Capacity – gal (l)	5.75 gal (21.7 l)			
Oil Capacity – qt (l)	7.08 gt (6.7 l)			
Air Filter	Three Stage			
Starter	Electric			
Engine Cooling	Liquid			
SAW DIMENSIONS				
Height – in (mm)	50" (1,270)	50" (1,270)	50" (1,270)	50" (1,270)
Minimum Saw Length (Transport) – in (mm)	64-1/4" (1,632)	64-1/4" (1,632)	64-1/4" (1,632)	64-1/4" (1,632)
Maximum Saw Length (Working) – in (mm)	107-1/2" (2,731)	107-1/2" (2,731)	107-1/2" (2,731)	107-1/2" (2,731)
Maximum Pointer Length – in (mm)	21-1/4" (540)	21-1/4" (540)	21-1/4" (540)	21-1/4" (540)
Frame Width – in (mm)	27" (686)	27" (686)	27" (686)	27" (686)
Saw Width – in (mm)	34-3/4" (863)	34-3/4" (863)	34-3/4" (863)	34-3/4" (863)
Front (Outside to Outside Wheel Width) – in (mm)	17" (432)	17" (432)	17" (432)	17" (432)
Rear (Outside to Outside Wheel Width) – in (mm)	27-1/2" (699)	27-1/2" (699)	27-1/2" (699)	27-1/2" (699)
Blade to Wall – in (mm)	2-1/4" (57)	2-1/4" (57)	2-1/4" (57)	2-1/4" (57)
Wheel Base Length – in (mm)	16-1/2" (419)	16-1/2" (419)	16-1/2" (419)	16-1/2" (419)
Blade Shaft Maximum Height – in (mm)	20-5/8" (524)	20-5/8" (524)	20-5/8" (524)	20-5/8" (524)
Weight Crated – lbs (kg)	1,180 lbs (536 kg)	1,180 lbs (536 kg)	1,180 lbs (536 kg)	1,180 lbs (536 kg)
Weight Uncrated – lbs (kg)	1,080 lbs (490 kg)	1,080 lbs (490 kg)	1,080 lbs (490 kg)	1,080 lbs (490 kg)
ACCESSORIES				
Light Kit w/Magnetic Base	701846 **26513** 3	237244		
Water Pump Kit	701846 **26502** 7	237243		

***= DATA PROVIDED BY MOTOR/ENGINE MANUFACTURER**

TECHNICAL SPECIFICATIONS	C4426GD	C4430GD	C4236GD
Product Number	701846 **42468** 4	701846 **42489** 9	701846 **42492** 2
Blade Guard Capacity - in (mm)	20" (660)	30" (762)	36" (914)
Maximum Depth of Cut - in (mm)	10-1/2" (267)	12-1/2" (318)	15" (381)
Arbor Size - in (mm)	1" (25.4)	1" (25.4)	1" (25.4)
Blade Flange Diameter - in (mm)	5" (127)	5" (127)	6" (152)
Blade Shaft RPM (3-Speed Gearbox)	H/M/L 3000/2000/1300	H/M/L 3000/2000/1300	H/M/L 3000/2000/1300
Blade Size vs. Gear Selection	H=12-16, M=18-24, L=26-36	H=12-16, M=18-24, L=26-36	H=12-16, M=18-24, L=26-36
Blade Shaft Diameter	1 - 5/8" (41)		
Blade Shaft Bearings	Oil Bath		
Gearbox Drive	1-7 Groove Power Band		
Blade Guard Attachment	Quick Detach Bayonet		
Blade Control	Electric-Hydraulic		
Axle - Front	1" (25.4)		
Axle - Rear	1" (25.4)		
Wheels - Front D x W x B	6" x 2 - 1/2" x 1" (152 x 64 x 25)		
Wheels - Rear D x W x B	10" x 3" x 1" (254 x 77 x 25)		
Handle Bars/Adjustment Length	32 1/2" (826)		
Transmission	Eaton Hydrostatic		
Rear End/Differential	Differential - Norton		
Control	Forward/Reverse Control, Engage/Disengaged Controls and Differential Lock		
Speed	0 - 220 FPM (Forward) 0 - 100 FPM (Reverse)		
Chassis	Heavy Duty jig-welded box frame		
Power Source	Diesel Turbo Charged		
Engine Type	Kubota		
Specifications	V1505-T-E3B-KEA-1		
*Maximum Horsepower**	44Hp (32.8kw)		
Displacement - cu in (l)	91.4 cu in (1,498 1)		
Bore - in (mm)	3.07" (78)		
Stroke - in (mm)	3.09" (78.4)		
Cylinder/Cycle	4 Cylinder Diesel		
Fuel Capacity - gal. (l)	5.75 gal (21.7 l)		
Oil Capacity - qt. (l)	7.08 gt (6.7 l)		
Air Filter	Three Stage		
Starter	Electric		
Engine Cooling	Liquid		

SAW DIMENSIONS	
Height - in (mm)	50" (1,270)
Minimum Saw Length (Pointer up & handles in) - in (mm)	64-1/4" (1,632)
Maximum Saw Length (Pointer down & handles out) - in (mm)	107-1/2" (2,731)
Maximum Pointer Length - in (mm)	21-1/4" (540)
Frame Width - in (mm)	27" (686)
Saw Width - in (mm)	34-3/4" (863)
Front (Outside to Outside Wheel Width) - in (mm)	17" (432)
Rear (Outside to Outside Wheel Width) - in (mm)	27-1/2" (699)
Blade to Wall - in (mm)	2-1/4" (46)
Wheel Base Length - in (mm)	16-1/2" (419)
Weight Crated - lbs (kg)	1,240lbs (562kg)
Weight Uncrated - lbs (kg)	1,140lbs (517kg)

*= Data Provided by Engine Manufacturer

TECHNICAL SPECIFICATIONS	C4820SD	C4826SD	C4830SD	C4836SD
Product Number	701846 **42468** 4	701846 **42472** 1	701846 **42474** 5	701846 **42476** 9
Blade Guard Capacity – in (mm)	20" (508)	26" (660)	30" (762)	36" (914)
Maximum Depth of Cut – in (mm)	8" (203)	10-1/2" (267)	12-1/2" (318)	15" (381)
Arbor Size – in (mm)	1" (25.4)	1" (25.4)	1" (25.4)	1" (25.4)
Blade Flange Diameter – in (mm)	4" (102)	5" (127)	5" (127)	6" (152)
Blade Shaft RPM	2,300	2,300	1,750	1,450
Blade Shaft Diameter – in (mm)	1-5/8" (41)			
Blade Shaft Bearings	Oil Bath			
Blade Shaft Drive	7 Belts			
Blade Guard Attachment	Quick Detach Bayonet			
Blade Control	Electro-Hydraulic			
Axle – Front – in (mm)	1" (25.4)			
Axle – Rear – in (mm)	1" (25.4)			
Wheels – Front D x W x B – in (mm)	6"x2-1/2"x1" (152x64x25)			
Wheels – Rear D x W x B – in (mm)	10"x3"x1" (254x77x25)			
Handle Bars/Adjustment Length – in (mm)	32-1/2" (826)			
Transmission	Eaton Hydrostatic			
Rear End/Differential	Differential - Norton			
Control	Forward/Reverse Control, Engage/Disengaged Controls and Differential Lock			
Speed	0-220 FPM (Forward) 0-100 FPM (Reverse)			
Chassis	Heavy Duty jig-welded box frame			
Power Source	Gasoline			
Engine Type	Hyundai			
Specifications	ZPP 416			
*Maximum Horsepower**	48 HP (35.8kw)			
Displacement – cu In (l)	97.6 cu in (1.6 l)			
Bore – in (mm)	3" (76.5)			
Stroke – in (mm)	3.4" (87)			
Cylinders/Cycle	4 Cylinders 4 Cycle			
Fuel Capacity – gal (l)	5.75 gal (21.7 l)			
Oil Capacity – qt (l)	3.9 qt. (3.7 l)			
Air Filter	Three Stage			
Starter	Electric			
Engine Cooling	Liquid			
SAW DIMENSIONS				
Height – in (mm)	50" (1,270)	50" (1,270)	50" (1,270)	
Minimum Saw Length (Transport) – in (mm)	64-1/4" (1,632)	64-1/4" (1,632)	64-1/4" (1,632)	64-1/4" (1,632)
Maximum Saw Length (Working) – in (mm)	107-1/2" (2,731)	107-1/2" (2,731)	107-1/2" (2,731)	107-1/2" (2,731)
Maximum Pointer Length – in (mm)	21-1/4" (540)	21-1/4" (540)	21-1/4" (540)	21-1/4" (540)
Frame Width – in (mm)	27" (686)	27" (686)	27" (686)	27" (686)
Saw Width – in (mm)	34-3/4" (863)	34-3/4" (863)	34-3/4" (863)	34-3/4" (863)
Front (Outside to Outside Wheel Width) – in (mm)	17" (432)	17" (432)	17" (432)	17" (432)
Rear (Outside to Outside Wheel Width) – in (mm)	27-1/2" (699)	27-1/2" (699)	27-1/2" (699)	27-1/2" (699)
Blade to Wall – in (mm)	2-1/4" (57)	2-1/4" (57)	2-1/4" (57)	2-1/4" (57)
Wheel Base Length – in (mm)	16-1/2" (419)	16-1/2" (419)	16-1/2" (419)	16-1/2" (419)
Blade Shaft Maximum Height – in (mm)	20-5/8" (524)	20-5/8" (524)	20-5/8" (524)	20-5/8" (524)
Weight Crated – lbs (kg)	1,220 (555 kg)	1,220 (555 kg)	1,220 (555 kg)	1,220 (555 kg)
Weight Uncrated – lbs (kg)	1,120 lbs (510 kg)	1,120 lbs (510 kg)	1,120 lbs (510 kg)	1,120 lbs (510 kg)
ACCESSORIES				
Light Kit w/Magnetic Base	701846 **26513** 3	237244		
Water Pump Kit	701846 **26502** 7	237243		

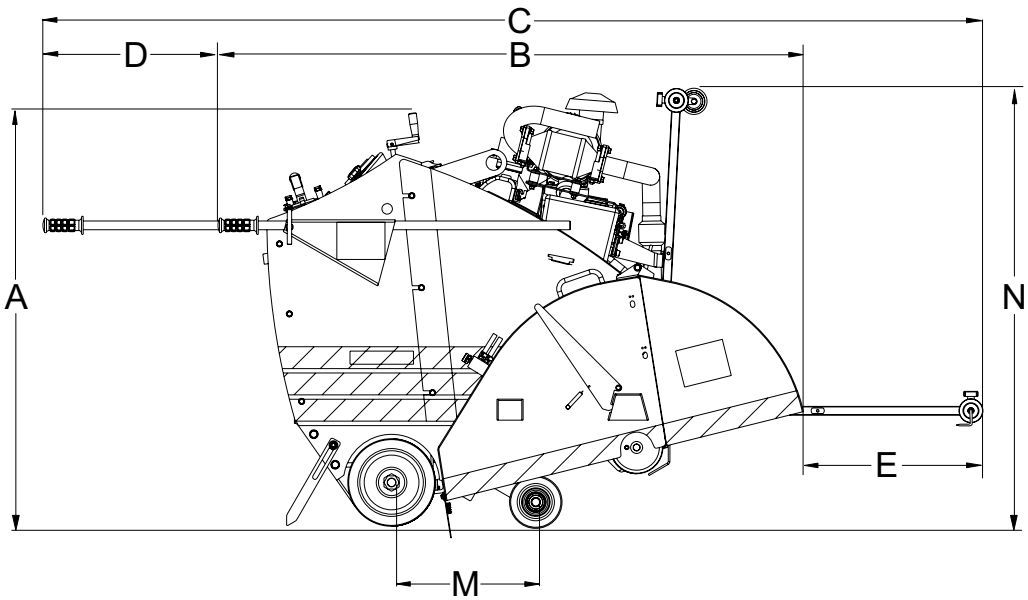
***= DATA PROVIDED BY ENGINE MANUFACTURER**

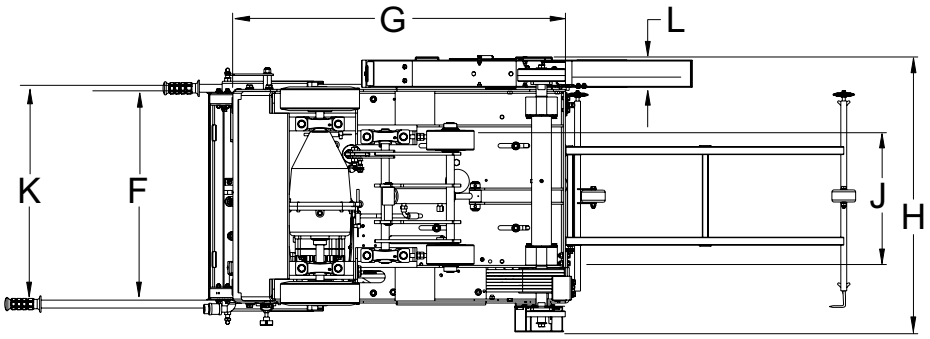
TECHNICAL SPECIFICATIONS	C4826GD	C4830GD	C4836GD
Product Number	701846 **42473** 8	701846 **42475** 2	701846 **42477** 6
Blade Guard Capacity - in (mm)	26" (660)	30" (762)	36" (914)
Maximum Depth of Cut - in (mm)	10-1/2" (267)	12-1/2" (318)	15" (381)
Arbor Size - in (mm)	1" (25.4)	1" (25.4)	1" (25.4)
Blade Flange Diameter - in (mm)	5" (127)	5" (127)	6" (152)
Blade Shaft RPM (3-Speed Gearbox)	H/M/L 3000/2000/1300	H/M/L 3000/2000/1300	H/M/L 3000/2000/1300
Blade Size vs. Gear Selection	H=12-16, M=18-24, L=26-36	H=12-16, M=18-24, L=26-36	H=12-16, M=18-24, L=26-36
Blade Shaft Diameter - in (mm)	1 - 5/8" (41)		
Blade Shaft Bearings	Oil Bath		
Gearbox Drive	1-7 Groove Power Band		
Blade Guard Attachment	Quick Detach Bayonet		
Blade Control	Electric-Hydraulic		
Axle - Front - in (mm)	1" (25.4)		
Axle - Rear - in (mm)	1" (25.4)		
Wheels - Front D x W x B - in (mm)	6" x 2 - 1/2" x 1" (152 x 64 x 25)		
Wheels - Rear D x W x B - in (mm)	10" x 3" x 1" (254 x 77 x 25)		
Handle Bars/Adjustment Length - in (mm)	32 1/2" (826)		
Transmission	Eaton Hydrostatic		
Rear End/Differential	Differential - Norton		
Control	Forward/Reverse Control, Engage/Disengaged Controls and Differential Lock		
Speed	0 - 220 FPM (Forward) 0 - 100 FPM (Reverse)		
Chassis	Heavy Duty jig-welded box frame		
Power Source	Gasoline		
Engine Type	Hyundai		
Specifications	ZPP 416		
*Maximum Horsepower**	48Hp (35.8kw)		
Displacement - cu in (l)	97.6 cu in (1.6 1)		
Bore - in (mm)	3" (76.5)		
Stroke - in (mm)	3.4" (87)		
Cylinder/Cycle	4 Cylinder 4 Cycle		
Fuel Capacity - gal. (l)	5.75 gal (21.7 l)		
Oil Capacity - qt. (l)	3.9 qt (3.7 l)		
Air Filter	Three Stage		
Starter	Electric		
Engine Cooling	Liquid		

SAW DIMENSIONS	
Height - in (mm)	50" (1,270)
Minimum Saw Length (Pointer up & handles in) - in (mm)	64-1/4" (1,632)
Maximum Saw Length (Pointer down & handles out) - in (mm)	107-1/2" (2,731)
Maximum Pointer Length - in (mm)	21-1/4" (540)
Frame Width - in (mm)	27" (686)
Saw Width - in (mm)	34-3/4" (863)
Front (Outside to Outside Wheel Width) - in (mm)	17" (432)
Rear (Outside to Outside Wheel Width) - in (mm)	27-1/2" (699)
Blade to Wall - in (mm)	2-1/4" (46)
Wheel Base Length - in (mm)	16-1/2" (419)
Weight Crated - lbs (kg)	1,240l (562)
Weight Uncrated - lbs (kg)	1,140 (517)

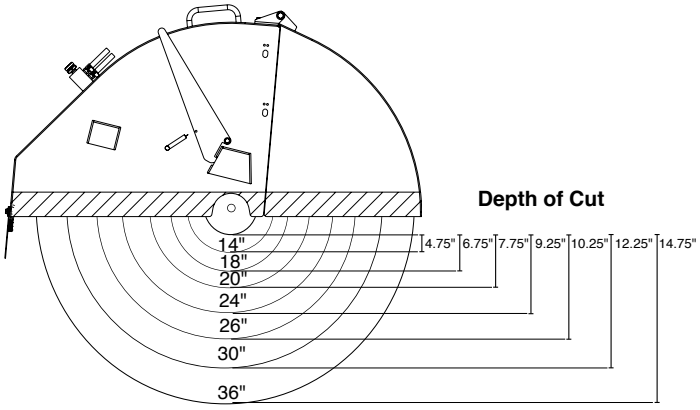
*= Data Provided by Engine Manufacturer

SAW DIMENSIONS





Item	Description	Inches	(mm)
A	Height	47-1/4"	(1,200)
B	Minimum Saw Length	64-1/4"	(1,632)
C	Maximum Overall Length	107-1/2"	(2,731)
D	Handle Extension	22"	(559)
E	Maximum Pointer Extension	21-1/4"	(540)
F	Frame Width	27"	(686)
G	Frame Length	42"	(1,067)
H	Saw Width	34-3/4"	(863)
J	Outside to Outside Wheel Width - Front	17"	(432)
K	Outside to Outside Wheel Width - Rear	27-1/2"	(699)
L	Blade to Wall	2-1/4"	(57)
M	Wheel Base Length	16-1/2"	(419)
N	Maximum Overall Height (Pointer Up)	50"	(1,270)



INSTRUCTIONS FOR CHANGING BLADE SPEED

WARNING

Do not exceed blade shaft speed shown for each blade size. Excessive blade speed could result in blade failure and serious personal injury.

NOTICE

Changing Blade Guard size **MUST** be accompanied by changing Pulleys to achieve the correct blade speed.

Blade Size	SD Model # Hyundai/ Kubota	GD Model # Kubota/ Hyundai	Includes	Blade Shaft Speed (Engine RPM = 3000)	Blade Speed (FPM)
20"	C4820SD, C4420SD	•	18" Blade Guard Assembly 5" Flange Set 3.2" Engine Pulley 4.12" Blade Shaft Pulley 7 3VX425 V-Belts	2300 RPM	14" = 8550 16" = 9800 18" = 11000 20" = 10700
26"	C4826SD, C4426SD	C4826GD, C4426GD	26" Blade Guard Assembly 5" Flange Set 2.8" Engine Pulley 4.12" Blade Shaft Pulley 7 3VX425 V-Belts (SD) 1 7/3VX400 Powerband (GD)	2000 RPM	18" = 9600 20" = 10700 22" = 11750 24" = 12800 26" = 12000
30"	C4830SD, C4430SD	C4830GD, C4430GD	30" Blade Guard Assembly 5" Flange Set 2.8" Engine Pulley 4.75" Blade Shaft Pulley 7 3VX425 V-Belts (SD) 1 7/3VX400 Powerband (GD)	1750 RPM	24" = 11100 26" = 12000 28" = 13000 30" = 13900
36"	C4836SD, C4436SD	C4836GD, C4436GD	36" Blade Guard Assembly 6" Flange Set 2.8" Engine Pulley 5.75" Blade Shaft Pulley 7 3VX450 V-Belts 36" Frame Corner 1 7/3VX400 Powerband (GD)	1450 RPM	30" = 11500 32" = 12250 34" = 13000 36" = 13750

NOTICE

As shown on the chart, some blade guards accept more than one size blade.

BLADE GUARDS AND BLADE SIZES	
BLADE GUARD	BLADE SIZE THAT CAN BE USED WITH BLADE GUARD
20"	14" up to 20"
26"	20" up to 26"
30"	26" up to 30"
36"	30" up to 36"

INSTRUCTIONS FOR CHANGING BLADE SPEED FOR THREE SPEED SAWS

DANGER!

Turn off saw before changing gears. Engage the E-Stop button for additional safety.

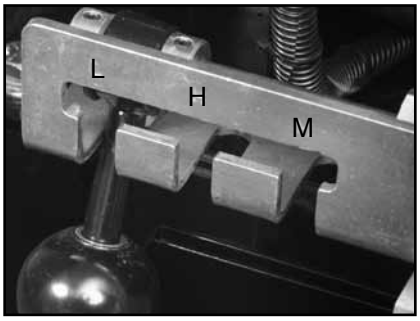
CAUTION

Never shift the Gearbox with the engine running. Only shift the Gearbox with the engine OFF. Gearbox damage could occur.

NOTE: The engine speed on this saw does not need to be changed from the factory set speed. The maximum RPM should be 2800, no load.

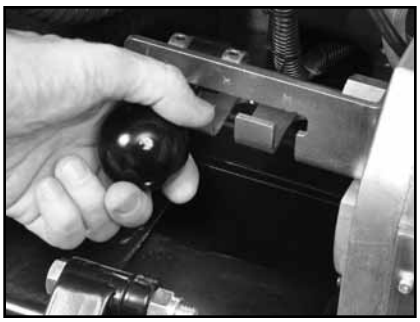
The 3-speed gearbox provides correct blade speed for different blade sizes. Determine gearbox speed based on the chart below.

Selected Gear	Blade Diameter/ Blade Guard	RPM
High	12" - 16"	3000
Medium	18" - 24"	2000
Low	26" - 36"	1300

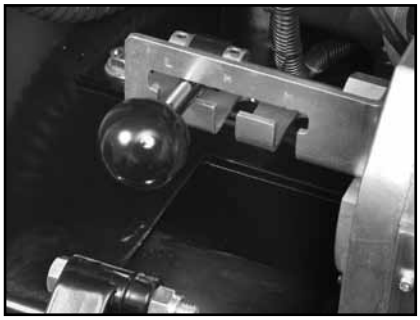


Gears are indicated by "L", "M", and "H"

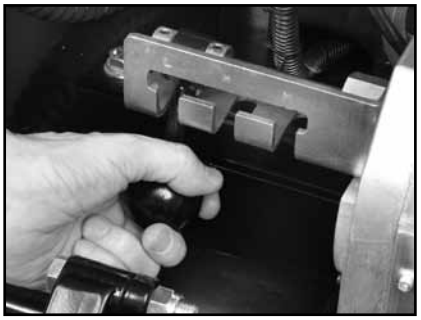
NOTE: Gears are not sequential. High speed is in middle position.



Move lever up to unlock gears



Place level in desired position



Move level all the way down to lock in gear selection

NOTE: Blade may need to be rotated slightly so gears align and lever slides to desired position/gear.

BELT AND POWERBAND INSPECTION AND TENSION ADJUSTMENT

The Norton Clipper Service Saw is designed with a transmission belt and a 7 rib powerband. The transmission belt and powerband should be inspected, adjusted and/or replaced periodically. Inspect the belt and powerband daily for cracks, fraying, separation and wear.

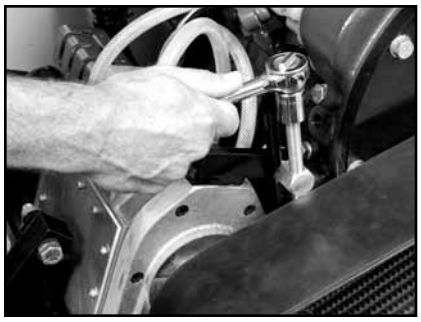
Powerband Tension

Check powerband tension by applying pressure by pushing down firmly with finger in the middle of the belt; approximately 1/8” deflection is correct.

To Tension Powerband

Loosen 4 bolts on the two retaining caps so gearbox can rotate

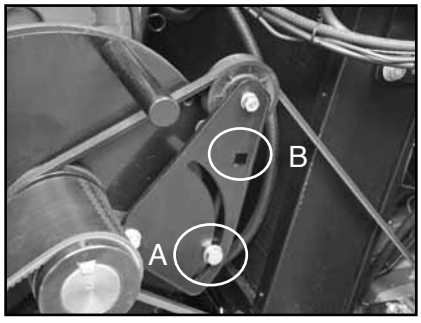
Loosen locknut on tension bar



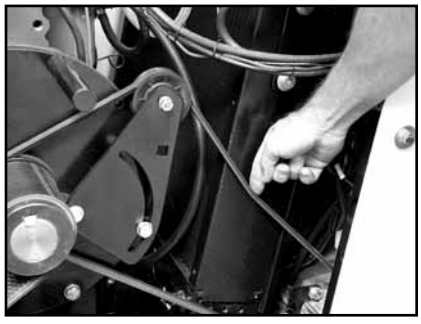
Apply tension to belt by turning tension screw clockwise, increasing tension

When correct tension has been obtained, retighten locknut and retaining caps. Replace belt guard.

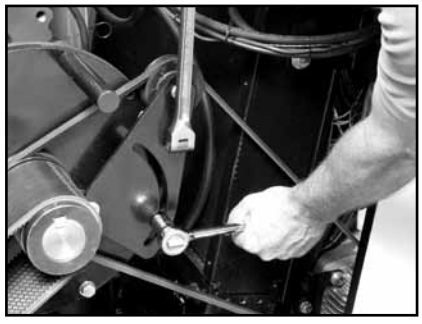
Transmission Belt Tension



A. Lock Nut
B. Breaker arm hole



Check transmission belt tension by applying pressure by pushing down firmly with finger in the middle of the belt; approximately 3/8” deflection is correct.



To Tension Belt: Loosen locknut on tension arm. Apply tension with ½” drive breaker bar.

Retighten locknut and check deflection is correct. Replace belt guard.

PRE-OPERATION CHECKLIST

WARNING

Before leaving our factory, every machine is thoroughly tested. Follow instructions strictly and your machine will give you long service in normal operating conditions.

Before starting up the machine, make sure you read this entire Operation Manual and are familiar with the operation of the machine.

Machine Cold

1. Check engine oil. See Engine Owner's Manual for type and quantity.
2. Connect battery cables.
3. Check hydrostatic transmission fluid level.
4. Test hydraulic operations. Raise and lower.
5. Check the engine air cleaner.

SCHEDULE MAINTENANCE QUICK REFERENCE

1-2 Hour Operation Checklist

WARNING

ALWAYS locate machine on a level surface with the engine "OFF" and the ignition switch set in the "OFF" position before performing any maintenance. Let the machine cool down prior to any service.

1. Check the engine air cleaner hose clamps. Tighten as required.
2. Tension the blade drive V-belts. **DO NOT** overtension.

WARNING

Before performing any maintenance, **ALWAYS** locate machine on a level surface with the engine "OFF" and the ignition switch set in the "OFF" position.

Service Daily

1. Check engine oil level.
2. Check blade guard for damage.
3. Check hoses and clamps for damage or looseness. Tighten or replace as necessary.
4. Check air cleaner for restriction. Replace air filters at regular intervals.

Interval Service

See the Maintenance Schedule Table on Page 28.

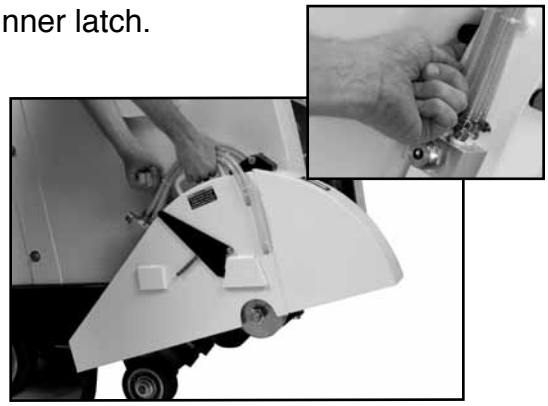
NOTICE

Before mounting the blade, machine should be turned “OFF”. Clean the blade collars and stub shaft.

BLADE MOUNTING INSTRUCTIONS

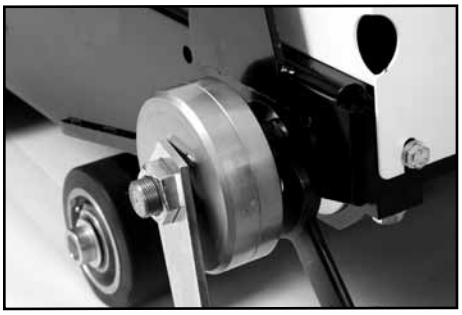
1. Remove Blade Guard.
   A. Unscrew the hose fitting to disconnect hose.
   B. Hold the Blade Guard by the handle. Release the inner latch.
   C. Pull the guard up and off the Saw.

Unscrew Hose Fitting

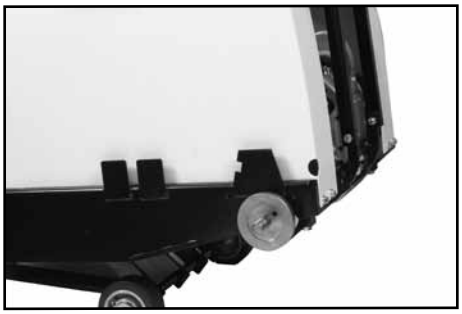


Release Inner Latch

2. Remove arbor bolt. If blade is mounted on right side saw, the bolt has left hand threads. To remove turn clockwise. If the blade is mounted on left side of saw, bolt has right hand threads. To remove, turn counter-clockwise.
3. Pull off outer flange.

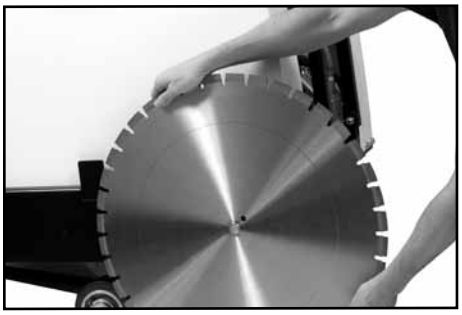


Remove Arbor Bolt

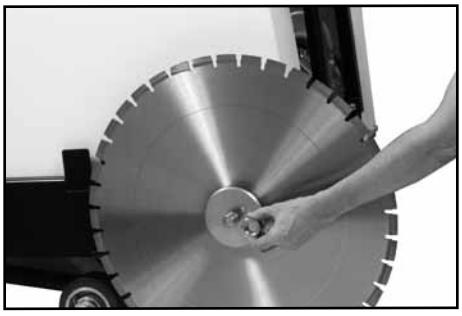


Pull Off Outer Flange

4. Install new blade.
5. Slide in the outer flange in place.



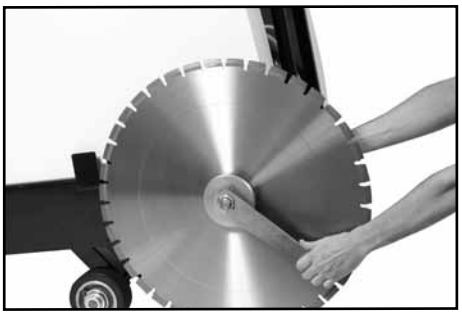
Install New Blade



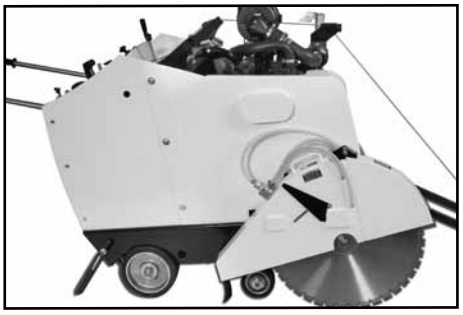
Slide Outer Flange and Arbor bolt in place

BLADE MOUNTING INSTRUCTIONS CONTINUED

6. Tighten the arbor bolt.
7. Install the blade guard in place. Make sure that the guard locks in place and connect the hose.



Tighten Arbor Bolt



Install Blade Guard

WARNING

Observe the rotation arrow on blade and **DO NOT** exceed maximum RPM stamped on the blade. To set proper RPM, consult the Blade Guards and Blade Sizes Table on page 16.

NOTICE

To meet ANSI safety standards, larger diameter blade flanges are required for large diameter blades. Information is available upon request or for complete safety information refer to ANSI Safety Code B7.1

NOTICE

We recommend the use of Norton Diamond blades with this saw.

STARTING ENGINE

NOTICE
Read the engine instructions manual before starting.

WARNING
Be sure blade is unobstructed and not resting on ground.

WARNING
Be sure hands and feet are clear of blade.

1. Check engine oil. Add oil if low.
2. Check fuel level. Add fuel if low.
3. Check cooling air intake areas and external surfaces of engine. Make sure surfaces are clean and unobstructed.
4. Check that air cleaner components and all shrouds, equipment covers and guards are in place and securely fastened.

STARTING INSTRUCTIONS

1. Place FNR Handle in **NEUTRAL**.
2. Verify Neutral Engagement Handle is down, in **NEUTRAL.**
3. Pull Engine Throttle Handle out half-way (Kubota and Deutz only).
4. Start engine by rotating Ignition Switch to the right.

NOTICE
DO NOT crank engine for more than 30 seconds at a time. If engine fails to start, wait about 2 minutes between cranking periods to prevent starter from overheating.

NOTICE
Allow engine to warm up at least 3 minutes before applying load.

5. When engine is warm, throttle may be used out to maximum position.
6. To stop engine, push throttle to idle, rotate ignition switch to “OFF” position.

NOTICE
If the engine has been running hard and is hot, do not shut engine off abruptly. Cool engine by removing load and allowing engine to run idle for 3 to 5 minutes.

SAW GUIDE ALIGNMENT AND ADJUSTMENT

WARNING

This operation is performed with the engine “OFF”!

The front and rear pointers are set in line at the factory. However, the pointers should be checked for proper alignment with the blade after every use. The following are the procedures for aligning the pointers with the blade, with the engine shut off.

1. Using a straight edge, carefully mark a line 12 feet long on a smooth level concrete surface.

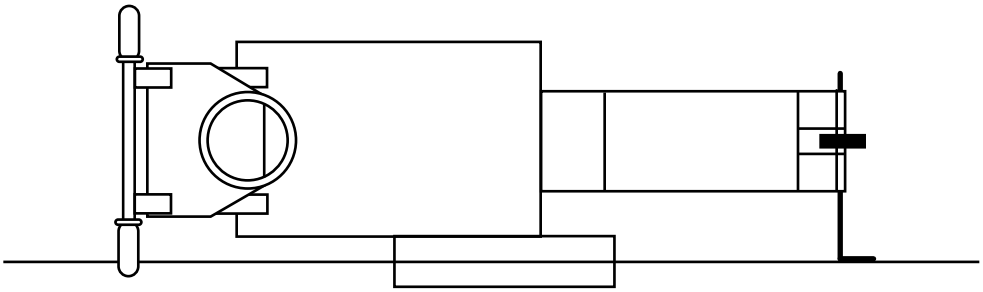
2. Place the saw parallel to the line. Lower the blade and center it over the line.

3. **FRONT:** With the blade centered over the line and the saw frame parallel to the line, lower the front pointer assembly and position the pointer over the line.

4. **REAR:** With the blade centered over the line and the saw frame parallel to the line, loose the pointe and adjust up or down and ensure that it touches the line.

5. Finally, roll the saw along the entire length of the line. The saw should lead off no more than 6 inches to the left in 12 feet of forward travel. Adjust the pointer in or out if the lead-off is outside this parameter.

6. Secure hardware.



MANEUVERING THE SAW

WARNING

The blade is spinning whenever the saw is running. Raise the blade as high as possible when maneuvering so that the blade will not strike the pavement.

DRY CUTTING

Dry cutting blades have been specially designed for use with concrete saws. Ensure that the blade you are using is clearly marked for dry cutting.

When dry cutting, it is important to keep the air filter clean. Check the condition of the filter at least every four (4) hours of operation. Clean the pre-filter (wash in soapy water and re-oil) and change the paper filters as soon as it becomes clogged. Concrete dust is very abrasive and will quickly damage internal engine parts, causing loss of compression and eventual engine failure.

Saw only as deep as the specifications and job conditions require. Remember airflow helps to cool the blade during dry cutting. Cutting too deep with one pass, or exerting excessive forward or side pressure can be dangerous. Step cut in increments of 1 inch (25 mm) or less, for the best results.

If reinforced abrasive blades are used for cured concrete, it is usually better to saw only 1 inch deep per pass. If deeper cuts are required, cut in multiple passes.

Thinner Diamond Blades are especially advantageous when cutting dry.

WET CUTTING

The water used on the blade is to provide coolant during cutting and to flush the concrete cutting from the cut. Turn the water control to full “ON” when using wet cutting blades. The required flow rate is 5 to 8 gallons per minute.

FNR HANDLE

The FNR Handle moves the saw forward by pushing the lever away from the operator and moves the saw in reverse by pulling the lever toward the operator. The further you push this lever, the faster the saw travels.

WARNING

Before starting the engine, place this lever in **NEUTRAL**.

RAISE/LOWER HANDLE

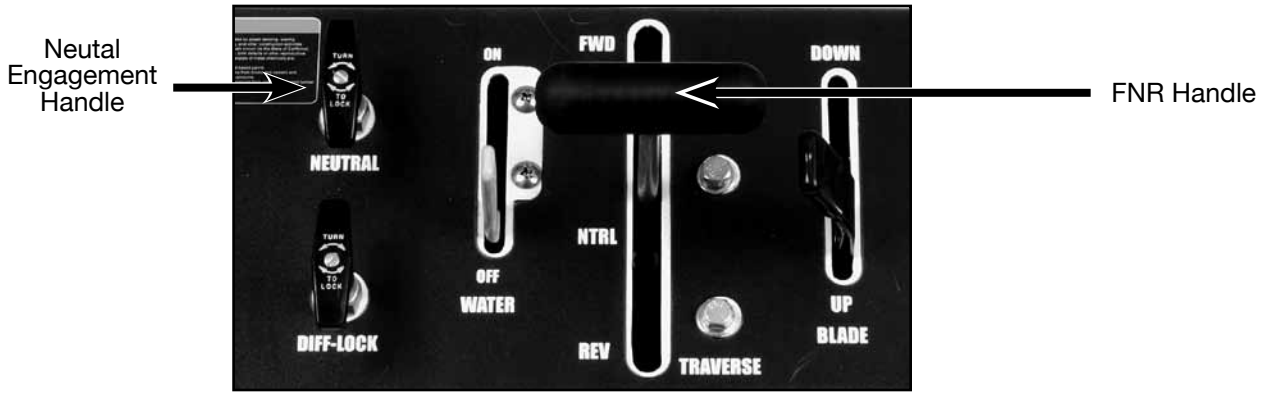
The raise/lower handle controls the depth of the blade. When pulled back, the electric/hydraulic pump will raise the blade out of the cut. When pushed forward the blade will lower. The lowering speed is faster, the farther forward the lever is pressed.

ENGAGING THE DRIVE UNIT

This saw is driven by a hydrostatic transmission. To engage the transmission, **PULL** the Neutral Engagement Handle up and turn to either direction to lock.

NOTICE

DO NOT engage the unit unless FNR Handle is on **NEUTRAL**.



Engage transmission

To disengage the transmission, twist the Neutral Engagement Handle to unlock, and **PUSH** down.

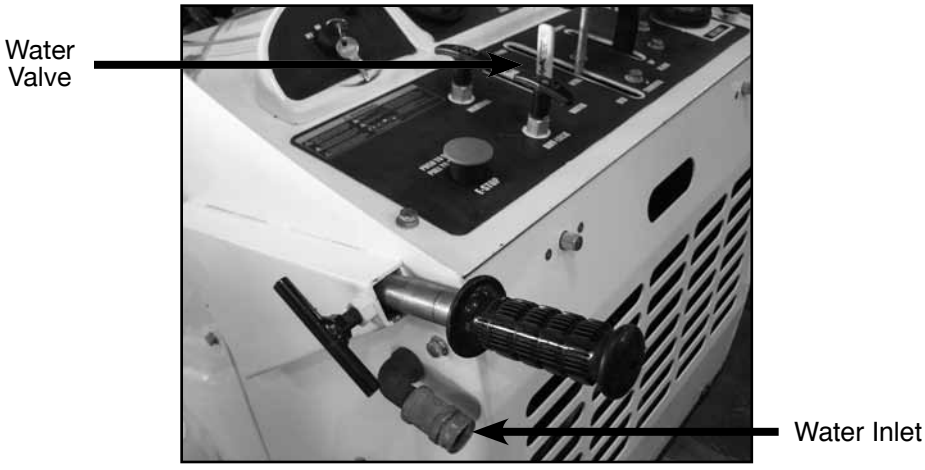
WATER HOOK UP

Prior to starting the engine, you should hook up the water hose to the Water Inlet (Figure 19) and visually inspect it to make sure that water is flowing to the blade. Hook up the hose to the unit and turn on the water source. Open the water valve.

NOTICE

Water flow volume can be metered by opening the water valve partially.

Next, lift the front of the blade guard and visually inspect the make sure water is flowing out of each of the tubes. If any of the holes is blocked, flush impurities from the tube.



Water Hook Up

DEPTH INDICATOR AND DEPTH STOP

The saw is equipped with a Depth Indicator and a Depth Stop. The Depth Indicator tells you approximately how deep you are in the cut. To set the indicator, you need to first lower the blade until it is just touching the ground and then rotate the Depth Indicator knob to 0.

The Depth Stop is used for several cuts at the same depth. It is set by finding the desired depth and then turning the knob until it is tight. This will prevent cutting below the “locked” level to provide a consistent depth with every cut.

Depth Indicator and Depth Stop

ENGINE

The operation and life of the engine depends on proper maintenance. Do not start engine until engine pre-check is complete. The engine pre-check consists of checking the oil, fuel level, air filter and greasing the wheel, axle, drive unit and arbor bearings. Basic engine maintenance is shown in Maintenance Schedule Table on the next page. For more detailed information, please refer to the Engine Operator Maintenance Manual and Warranty provided with the saw.

NOTICE

When breaking-in a new saw, we recommend running the engine for one hour with no load prior to actual use on the job.

AIR CLEANER

Due to the dusty conditions created by sawing, it is essential to check the engine air cleaner element daily. Remove the element and shake out the accumulated dust and dirt. Wipe out dirt from the inside cover and from the housing. Check the engine manual for washing instructions. Stocking replacement filters is strongly recommended.

ARBOR, AXLE, DRIVE UNIT AND WHEEL BEARINGS

Blades shaft, Axle, Drive Unit, and Wheel Bearings should be greased according to the Maintenance Schedule table on the next page.

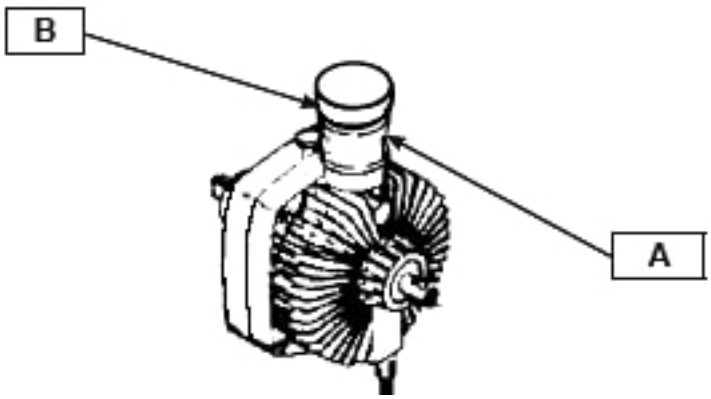
WARNING

DO NOT inspect when the engine is running.

Use of high quality detergent oil of API (American Petroleum Institute) service class SF or SG. Select the viscosity based on the air temperature at the time of operation. For temperatures below 0ºF, 5W-20 or 5W-30 oil is recommended. For temperatures above 0º, 10W-30 oe 10W-40 oil is recommended. Check your engine manual for other recommendations.

HYDROSTATIC DRIVE UNIT

The fluid shipped in your hydrostatic transmission is a fluid having a viscosity equivalent to SAE 20W20. Mobil fluid 300 or any other oil equivalent to SAE 20W20 is preferrred by Eaton Transmission. The expansion tank is marked for proper fluid level. It should be checked when unit is cold. **DO NOT** allow the unit to run low on oil. If the unit is low, you can add oil by removing the cap.



Expansion Tank and Cap

MAINTENANCE SCHEDULE

MAINTENANCE SCHEDULE	DAILY	25 HOURS	50 HOURS	250 HOURS
Check Oil Level	X			
Check Air Filter	X			
Check Air Intake, Clean if Necessary	X			
Grease Rear Wheel Pillow Blocks		X		
Grease Front Wheel Bearings		X		
Check Transmission Fluid, Add if Low		X		
Check Power Unit Fluid, Add if Low		X		
Service Air Cleaner Element			X	
Change Oil		X		
Change Oil Filter			X	
Check Compression				X
Inspect Fuel Filter, Replace if Dirty				X
Inspect Spark Plugs and Ignition System				X
Inspect Cooling System and Clean				X
Inspect Starting Motor				X

TROUBLESHOOTING

When trouble occurs, be sure to check the simple causes which, at first, may seem too obvious to be considered. Refer to the table below for problems and their possible causes.

	Cause / Problem	Loose Transmission Linkage	Oil Level	Cooling Fan	Water in Oil Reservoir	Dirty Cooling Fans	Loose Drive Chain
TRANSMISSION	Transmission jerky when starting	X	X				X
	Transmission operates in one direction	X					
	Transmission operating hot	X	X	X		X	
	Oil color is black			X		X	
	Oil color is milky				X		

	Cause / Problem	No Fuel	Improper Fuel	Dirt in Fuel Line	Fuse Burned Out	Incorrect Oil Level	Dirty Air Filter	Faulty Spark Plugs
ENGINE	Will not start	X		X	X		X	X
	Hard starting	X	X	X			X	X
	Stops suddenly	X		X		X	X	
	Lacks power		X	X		X	X	X
	Operates erratically		X	X			X	X
	Knocks or pings		X					X
	Skips or misfires			X			X	X
	Back fires			X			X	X
	Overheats			X			X	X
	High Fuel Consumption						X	X

	Cause / Problem	Improper Blade for the Application	Improper Belt Tension	Damage Caused by External Objects
OTHER	Reduced blade life	X	X	
	Excessive belt wear		X	X

NOTES

STEP CUTTING

1. Follow general instructions outlined in the section Operating the Saw pages 18 to 19.

2. When deep sawing (more than 4") or concrete with hard aggregate, sawing to full depth in several cuts should be made in incremental steps of 1-1/2 to 2 inches until the desired depth of cut is reached. In softer aggregates or asphalt, it may be possible to saw full depth in two passes.

3. Gradually move the speed control lever forward to increase the cutting speed. If the blade stalls in the cut (which can happen when deep sawing) immediately raise blade from cut. If not done at once, the belts will spin freely and burn. Check belts for proper tension and continue sawing at a slower rate of speed.

4. On final pass, lower the blade until it hits the sub-base (sandy color will appear in the water being discharged from the cut). Raise blade approximately 1/2" from bottom. The sand and gravel particles of the sub-base may cause premature wear or damage to the saw blade.

5. It is common, on the final pass of the cut, for pavement to wedge blade, particularly on a hot day. When this happens, immediately stop engine. If the blade is wedged, remove the Blade Shaft Bolt and Outside Collar and move the saw away from the blade. To remove a wedged blade from the concrete, use a jack hammer and carefully chip out concrete around the blade. (Pounding or twisting the blade may cause severe damage).

6. Go slowly with a new blade until it "opens up" that is, until you can see and feel the diamonds.

7. Small corrections can be made by leaning on handles.
   Deep sawing is very hard on saws and blades. Experienced operators soon get a "feel" for the saw and are constantly on guard to slow down when they hit excessive steel or hard aggregate.

CONTACT

Please contact Saint-Gobain Abrasives, Inc. Customer Service Department with any questions you might have regarding distributors, parts or service.
Telephone: **(254) 918-2310**
Fax: **(254) 918-2312**
Customer Service Hours: **Monday through Friday, 6AM-6PM CST**

Saint-Gobain Abrasives, Inc.
2770 W. Washington St.
Stephenville, TX 76401

WARRANTY

Norton warrants all products manufactured by it against defects in workmanship or materials for a period of one (1) year from the date of shipment to the customer.

The responsibility of Norton under this warranty is limited to replacement or repair of defective parts at Norton's Indianapolis, Indiana Distribution Center, or at a point designated by it, of such part as shall appear to us upon inspection at such point, to have been defective in material or workmanship, with expense for transportation borne by the customer.

In no event shall Norton be liable for consequential or incidental damages arising out of the failure of any product to operate properly.

Integral units such as **gasoline engines, electric motors, batteries, tires, transmissions, etc.**, are excluded from this warranty and are subject to the prime manufacturer's warranty.

This warranty is in lieu of all other warranties, expressed or implied, and all such other warranties are hereby disclaimed.

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clipper®

WARNING

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead based paints,**
- **Crystalline silica from bricks and cemetn and other masonry products, and**
- **Arsenci and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how ofter you do this ype of work. To reduce your exporsure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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